

Title (en)

FRICTION STIR WELDING TOOL, FRICTION STIR WELDING APPARATUS, AND FRICTION STIR WELDING METHOD

Title (de)

REIBRÜHRSCHEISSWERKZEUG, REIBRÜHRSCHEISSVORRICHTUNG UND REIBRÜHRSCHEISSVERFAHREN

Title (fr)

OUTIL, APPAREIL ET PROCÉDÉ DE SOUDAGE PAR FRICTION-MALAXAGE

Publication

**EP 3539709 A3 20191120 (EN)**

Application

**EP 19152997 A 20190122**

Priority

JP 2018044583 A 20180312

Abstract (en)

According to one embodiment, a friction stir welding tool (1) includes a probe pin part (4) and a shoulder part (2). The probe pin part (4) has a spiral first groove (4a) and a spiral second groove (4b). The spiral first groove (4a) is provided at one end portion of the probe pin part (4). The second groove (4b) is provided at the other end portion of the probe pin part (4) and has the reverse thread orientation of the first groove (4a). The probe pin part (4) has a columnar shape. The shoulder part (2) has a first hole (2b). A spiral ridge conforming to the second groove (4b) is provided on an inner wall of the first hole (2b). The probe pin part (4) and the shoulder part (2) are fastened at the second groove (4b). A portion of the probe pin part (4) where the first groove (4a) is provided protrudes from an end face (2a) of the shoulder part (2).

IPC 8 full level

**B23K 20/12** (2006.01)

CPC (source: EP US)

**B23K 20/12** (2013.01 - US); **B23K 20/125** (2013.01 - US); **B23K 20/1255** (2013.01 - EP US)

Citation (search report)

- [X] US 7401723 B2 20080722 - STOL ISRAEL [US], et al
- [X] US 7461769 B2 20081209 - WALDRON DOUGLAS J [US], et al
- [A] JP 5864446 B2 20160217

Cited by

CN110640295A

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3539709 A2 20190918; EP 3539709 A3 20191120**; JP 2019155410 A 20190919; JP 6824213 B2 20210203; US 2019275607 A1 20190912

DOCDB simple family (application)

**EP 19152997 A 20190122**; JP 2018044583 A 20180312; US 201916253487 A 20190122